

Contextual Analysis of Innovation Process Models toward the Fourth Industrial Revolution

Ambika Koonj Beharry ^{a,Ψ}, and Kit Fai Pun ^b

Department of Mechanical and Manufacturing Engineering, The University of the West Indies, St Augustine, Trinidad and Tobago; West Indies.

^aEmail: Ambika.KoonjBeharry@sta.uwi.edu

^bEmail: KitFai.Pun@sta.uwi.edu.

^Ψ Corresponding Author

(Received 07 April 2020; Revised 09 July 2020; Accepted 30 July 2020)

Abstract: *Innovation is a contextual subject drawing from a multiplicity of perspectives with applications. This paper presents the taxonomies of innovation, explores the innovation-industrialisation relationship, and relates the evolution of innovation concepts to various phases of industrial revolutions. Advocates and features of nine (9) innovation process models in the innovation literature are analysed, and a comparative analysis of innovation processes is made. The analysis compares the different stages of the innovation process as advocated in respective models, and identifies their main contextual themes and sub-themes which serve as antecedents to innovation emerging from a firm-level perspective. Five contextual themes emerge from the analysis – 1) strategy; 2) management; 3) organisational culture; 4) organisational learning and 5) communication. Within each theme, several endogenous factors were identified based on their frequency of occurrence in these models. The most common factors, with a frequency of six or more, were found to be: from the strategy domain, customer-centric focus, market orientation and future-orientation; from the management domain, support for innovation and from the communication domain, inter-firm communication. This paper provides a chronological review of the nine innovation process models, in relation to innovation-industrialisation relationship and implications for operating in the fourth industrial revolution. It contributes to identify the contextual themes and factors of innovation process models with organisational learning at the firm's level. Future studies would examine the contextual themes of innovation process in organisations towards technology transfer and organisational learning, across various industry sectors in selected nation(s).*

Keywords: *Industrial revolutions, innovation processes, firm-level perspective, factors*